

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-7. (Cancelled)

8. (Currently amended) A method of diagnosing high risk [[of]] HPV-induced neoplasia by detecting HPV-induced cell transformation in a patient infected with HPV comprising the steps of:

- quantifying levels of at least two HPV mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 2 is indicative of high risk HPV-induced cell transformation and high risk of neoplasia.

9. (previously presented) A method of diagnosing the onset of high risk HPV-induced neoplasia in a patient infected with HPV comprising the steps of:

- quantifying a group 1 and a group 2 and/or a group 3 HPV mRNA from a sample collected from said patient;
- determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 2 is indicative of high risk HPV-induced neoplastic onset.

10. (previously presented) A method of diagnosing stage of high risk HPV-induced disease in a patient infected with HPV comprising the steps of:

- quantifying levels of HPV mRNA from a sample collected from said patient;

- determining the level of E6 and/or E7 mRNA and the level of E2 and/or L1 and/or L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA level to L1 and/or L2 and/or E2 mRNA level wherein any ratio of greater than 2 is indicative of early stage HPV-induced disease, thereby diagnosing the stage of high risk HPV-induced disease in a patient infected with HPV.

11. (previously presented) A method of diagnosing high risk HPV-induced cancer in a patient infected with HPV comprising the steps of:

- quantifying levels of at least two HPV mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 4 is indicative of high risk HPV-induced cancer.

12. (previously presented) A method of diagnosing the risk or onset of high risk HPV-induced cancer in a patient infected with HPV comprising the steps of:

- quantifying a group 1 and a group 2 and/or a group 3 HPV mRNA from a sample collected from said patient; and
- determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 4 is indicative of high risk or onset of HPV-induced cancer.

13. (previously presented) A method of diagnosing risk of HPV18-induced neoplasia by detecting HPV18-induced cell transformation in a patient infected with HPV comprising the steps of:

- quantifying levels of at least two HPV18 mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and

- determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 2 is indicative of HPV18-induced cell transformation and risk of neoplasia.
14. (previously presented) A method of diagnosing the onset of HPV18-induced neoplasia in a patient infected with HPV18 comprising the steps of:
- quantifying a group 1 and a group 2 and/or a group 3 HPV18 mRNA from a sample collected from said patient;
 - determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 2 is indicative of HPV18-induced neoplastic onset.
15. (previously presented) A method of diagnosing stage of HPV18-induced disease in a patient infected with HPV18 comprising the steps of:
- quantifying levels of HPV18 mRNA from a sample collected from said patient;
 - determining the level of E6 and/or E7 mRNA and the level of E2 and/or L1 and/or L2 mRNA; and
 - determining a ratio of E6 and/or E7 mRNA level to L1 and/or L2 and/or E2 mRNA level wherein any ratio of greater than 2 is indicative of early stage HPV18-induced disease, thereby diagnosing the stage of HPV18-induced disease in a patient infected with HPV.
16. (previously presented) A method of diagnosing HPV18-induced cancer in a patient infected with HPV18 comprising the steps of:
- quantifying levels of at least two HPV18 mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and
 - determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 4 is indicative of HPV18-induced cancer.
17. (previously presented) A method of diagnosing the risk or onset of HPV18-induced cancer in a patient infected with HPV18 comprising the steps of:

- quantifying a group 1 and a group 2 and/or a group 3 HPV18 mRNA from a sample collected from said patient; and
- determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 4 is indicative of high risk or onset of HPV18-induced cancer.

18. (previously presented) A method of diagnosing risk of HPV31-induced neoplasia by detecting HPV31-induced cell transformation in a patient infected with HPV comprising the steps of:

- quantifying levels of at least two HPV31 mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 2 is indicative of HPV31-induced cell transformation and risk of neoplasia.

19. (previously presented) A method of diagnosing the onset of HPV31-induced neoplasia in a patient infected with HPV31 comprising the steps of:

- quantifying a group 1 and a group 2 and/or a group 3 HPV31 mRNA from a sample collected from said patient;
- determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 2 is indicative of HPV31-induced neoplastic onset.

20. (previously presented) A method of diagnosing stage of HPV31-induced disease in a patient infected with HPV31 comprising the steps of:

- quantifying levels of HPV31 mRNA from a sample collected from said patient;
- determining the level of E6 and/or E7 mRNA and the level of E2 and/or L1 and/or L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA level to L1 and/or L2 and/or E2 mRNA level wherein any ratio of greater than 2 is indicative of early stage HPV31-

induced disease, thereby diagnosing the stage of HPV31-induced disease in a patient infected with HPV.

21. (previously presented) A method of diagnosing HPV31-induced cancer in a patient infected with HPV31 comprising the steps of:

- quantifying levels of at least two HPV31 mRNAs from a sample collected from said patient, wherein said mRNAs comprise a first mRNA selected from the group consisting of E6 mRNA and E7 mRNA and a second mRNA selected from the group consisting of E2 mRNA, L1 mRNA, and L2 mRNA; and
- determining a ratio of E6 and/or E7 mRNA to L1 and/or L2 and/or E2 mRNA, wherein any ratio of greater than 4 is indicative of HPV31-induced cancer.

22. (previously presented) A method of diagnosing the risk or onset of HPV31-induced cancer in a patient infected with HPV31 comprising the steps of:

- quantifying a group 1 and a group 2 and/or a group 3 HPV31 mRNA from a sample collected from said patient; and
- determining a ratio of group 1 mRNA level to group 2 and/or group 3 mRNA level wherein any ratio of greater than 4 is indicative of high risk or onset of HPV31-induced cancer.